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| U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE<br><small>FORM PTO-1390 (REV. 11-2000)</small>  |  | ATTORNEY'S DOCKET NUMBER<br><i>fraunh01.033</i>                                   |
| <b>TRANSMITTAL LETTER TO THE UNITED STATES<br/>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br/>CONCERNING A FILING UNDER 35 U.S.C. 371</b>   |  | <small>U.S. APPLICATION NO. (If known, see 37 CFR 1.5</small><br><b>10/500772</b> |
| INTERNATIONAL APPLICATION NO.<br>PCT/US03/00240   | INTERNATIONAL FILING DATE<br>06 January 2003 | PRIORITY DATE CLAIMED<br>07 January 2002  |
| TITLE OF INVENTION <i>Using runs of cells to traverse a ray through a volume</i>  |  |   |
| APPLICANT(S) FOR DO/EO/US <i>P. Stephenson, et al.</i>  |  |   |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:   |  |   |
| <ol style="list-style-type: none"> <li><input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li><input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li><input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</li> <li><input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</li> <li><input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li><input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ol> </li> <li><input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li><input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li><input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li><input type="checkbox"/> An English lanugage translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol> |  |   |
| Items 11 to 20 below concern document(s) or information included:   |  |   |
| <ol style="list-style-type: none"> <li><input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li><input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li><input checked="" type="checkbox"/> A FIRST preliminary amendment.</li> <li><input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</li> <li><input type="checkbox"/> A substitute specification.</li> <li><input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li><input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</li> <li><input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</li> <li><input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li> <li><input type="checkbox"/> Other items or information:<br/><i>return postcard</i></li> </ol>  |  |   |

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| U.S. APPLICATION NO. (IF UNKNOWN, See 37 CFR 1.5)  | INTERNATIONAL APPLICATION NO.<br>PCT/US03/00240 | ATTORNEY'S DOCKET NUMBER<br>fraunh01.033 |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
|--|---|--|--------------|--------------|--|----|--------------|------------------------------|----|-----------|----|--------------------|---------|--|-----------|----|--|--|--|------------|----|--------------------------------------|--|--|--|----|----|
| <p>21. <input checked="" type="checkbox"/> The following fees are submitted:</p> <p><b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b></p> <p>Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO..... \$1000.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... \$860.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00</p> |   | <b>CALCULATIONS PTO USE ONLY</b>         |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>  |   | \$ 690.00                                |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <p>Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>18 - 20 =</td> <td>10</td> <td>x \$18.00</td> <td>\$</td> </tr> <tr> <td>Independent claims</td> <td>2 - 3 =</td> <td></td> <td>x \$80.00</td> <td>\$</td> </tr> <tr> <td colspan="3"><b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b></td> <td>+ \$270.00</td> <td>\$</td> </tr> <tr> <td colspan="4"><b>TOTAL OF ABOVE CALCULATIONS =</b></td> <td>\$</td> </tr> </tbody> </table>  |   | CLAIMS                                   | NUMBER FILED | NUMBER EXTRA | RATE   | \$ | Total claims | 18 - 20 =                    | 10 | x \$18.00 | \$ | Independent claims | 2 - 3 = |  | x \$80.00 | \$ | <b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b> |  |  | + \$270.00 | \$ | <b>TOTAL OF ABOVE CALCULATIONS =</b> |  |  |  | \$ | \$ |
| CLAIMS   | NUMBER FILED                                    | NUMBER EXTRA                             | RATE         | \$           |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| Total claims   | 18 - 20 =                                       | 10                                       | x \$18.00    | \$           |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| Independent claims   | 2 - 3 =   |  | x \$80.00    | \$           |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b>   |   |  | + \$270.00   | \$           |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>TOTAL OF ABOVE CALCULATIONS =</b>   |   |  |              | \$           |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.  |   | \$                                       |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>SUBTOTAL =</b>  |   | \$ 345.00                                |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <p>Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><b>TOTAL NATIONAL FEE =</b></th> <th>\$</th> </tr> </thead> <tbody> <tr> <td colspan="2">Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +</td> <td>\$</td> </tr> <tr> <td colspan="2"><b>TOTAL FEES ENCLOSED =</b></td> <td>\$ 345.00</td> </tr> </tbody> </table>   |   | <b>TOTAL NATIONAL FEE =</b>              |              | \$           | Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + |    | \$           | <b>TOTAL FEES ENCLOSED =</b> |    | \$ 345.00 | \$ |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>TOTAL NATIONAL FEE =</b>  |   | \$                                       |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +   |   | \$                                       |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <b>TOTAL FEES ENCLOSED =</b>   |   | \$ 345.00                                |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
|  |   | <b>Amount to be refunded:</b> \$         |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
|  |   | <b>charged:</b> \$                       |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <p>a. <input checked="" type="checkbox"/> A check in the amount of \$ 345.00 to cover the above fees is enclosed.</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 501315. A duplicate copy of this sheet is enclosed.</p> <p>d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p>   |   |  |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <p><b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.</b></p> <p>SEND ALL CORRESPONDENCE TO:</p> <p>Gordon E. Nelson, Patent Attorney, PC<br/>57 Central St., P.O. Box 782,<br/>Rowley, MA 01969</p>  |   |  |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |
| <br><b>SIGNATURE</b><br>Gordon E. Nelson<br><b>NAME</b><br>30,093<br><b>REGISTRATION NUMBER</b>  |   |  |              |              |  |    |              |                              |    |           |    |                    |         |  |           |    |  |  |  |            |    |                                      |  |  |  |    |    |